

REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-17 are pending in this application and have been rejected.

Claim 1 has been amended herein. Applicants respectfully assert that the amendments to the claims add no new matter.

CLAIM REJECTIONS

35 U.S.C. § 103 Rejections

In the final Office Action, the Examiner has maintained his previous rejection of claims 1-17 under 35 U.S.C. § 103(a), as being unpatentable over Sakamoto et al. (U.S. Pat. 6,153,334) in view of Ebihara et al. (U.S. Pat. 6,331,367). Applicants respectfully traverse this rejection.

Applicants previously stated that the present invention relates to an electrochemical cell in which both the cathode and the anode are composed of mesoporous material (i.e., have a mesoporous structure) having a periodic arrangement of substantially uniformly sized pores, which materials have been produced by a liquid crystal templating process, are monolithic in nature, and contain a long-range, regular arrangement of pores having defined topology and substantially uniform pore size, i.e., they are films deposited from a liquid crystal template. The Examiner commented that limitations in the specification are not read into the claims.

Accordingly, Applicants have herein amended independent claim 1 to recite that the mesoporous structure of both the cathode and the anode have been fabricated via a liquid crystal templating process. This amendment finds support in the specification as filed, specifically at page 2, lines 8-14; page 5, lines 7-10; and page 9, lines 15-26 (Example 2).

Applicants previously argued that neither Sakamoto nor Ebihara contain disclosure of a "periodic arrangement of substantially uniformly sized pores" because Sakamoto relates to a completely different type of material, namely materials that are particulate, whose porosity results from grain boundaries between crystals and have solid particles, and because Ebihara relates to particulate materials that are porous merely on the particle surfaces and have particles that are internally solid and non-homogeneous. The Examiner replied that these arguments are not persuasive because the claims are entirely silent on film-type material and there is no patentable basis for any distinctions of this type in the scope of the claims.

The Examiner states that he does not understand Applicants' assertion that Ebihara is non-homogeneous and nickel rich at the particle surfaces, because the scope of the claims do not preclude non-homogeneity or particles that are nickel rich at their surfaces. Applicants also previously argued that Sakamoto fails to disclose nickel metal having any kind of porous structure, and the Examiner replied that claim 1 requires that the electrodes comprise nickel, not nickel metal.

Applicants explain that there is a fundamental difference between porous materials produced using liquid crystal templating processes (which will have a "periodic arrangement of substantially uniform pores" as claimed) and processes which do not use any such templating (which will not have a "periodic arrangement of substantially uniform pores" as claimed). However, it seems that the Examiner has ignored this feature altogether. Applicants clarify that the claimed feature "periodic arrangement of substantially uniform pores" requires the pores to be (i) essentially the same as one another (i.e. substantially uniform) and (ii) arranged in an ordered, repeating pattern (i.e. in a periodic arrangement). However, such periodicity and uniformity requires that there to be some kind of template to direct the formation of the periodic arrangement and the uniformity of pores. The present invention uses liquid crystal templating in this regard, as now recited in amended independent claim 1. In contrast, neither Sakamoto nor Ebihara provides any means to direct the formation of periodic, uniform pores. Thus, the "pores" of Sakamoto and Ebihara are not periodic and are not uniform, and so do not meet this claim feature.

Since neither Sakamoto nor Ebihara discloses any materials of the type claimed, namely materials with a mesoporous structure fabricated via a liquid crystal templating

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process and having a periodic arrangement of uniformly sized pores, the combination of Sakamoto and Ebihara do not render obvious the invention recited in amended independent claim 1. Accordingly, Applicants respectfully assert that independent claim 1 is allowable.

Each of claims 2-17 depends, directly or indirectly, from independent claim 1, and therefore includes all the limitations of that claim. Therefore, Applicants respectfully assert that claims 2-17 are likewise allowable. Accordingly, Applicants respectfully request that this rejection of claims 1-17 be withdrawn.

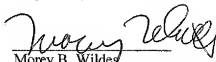
Conclusion

In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, or if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,


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